

## The "Art" of Science



Puzzle solutions: <http://health.utah.gov/lab/labimp>  
Under Clinical Laboratory Training click Clinical Laboratory Training  
then Sudoku

Utah Department of Health    Unified State Laboratories

Bureau of Laboratory Improvement

June 2009



## Medical Technologist

(The "other" detective)

Clinical Laboratory Science Sudoku

# Immunohematologist

Solving the illness puzzle

## ANTIBODY'S

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “antibody’s”

		S	Y			T		
N	O			B				A
Y				I	T	O	N	
		Y		A	O	S	I	
	S	B	N				D	
I					S			T
		I	O		Y			N
D		N		S			A	
B			T			D		I



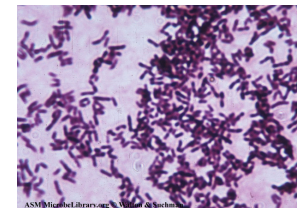
# Microbiologist

Solving the illness puzzle

## BACTERIUM

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “bacterium”

	B	E				C	I	
	I		U	E	R		A	
T	A						R	E
			M		U			
				C				
			E		T			
A	M						U	I
	U		A	I	M		E	
	E	T				A	B	



# Clinical Chemist

Solving the illness puzzle

## CHEMISTRY

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “chemistry”

Y	E			I			M	
I		R			S	E	C	
			E			H		Y
	I	M	T	H				
	C	E				S	T	
				S	I	M	H	
E		H			R			
	Y	C	M			I		R
	R			C			E	H



# Geneticist

Solving the illness puzzle

## CHROMAGEN

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “chromagen”

C		N	H		G	R		E
R		M						
E		O	C					A
G		H	M					N
N		R						
M		A	R		E	C		G
				O			N	
			N	H			G	O
				E			A	



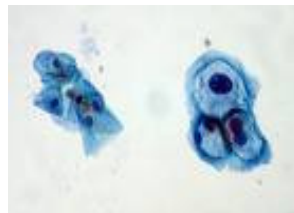
# Cytotechnologist

Solving the illness puzzle

## CHROMATIN

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word "chromatin"

					A	H		
	M		N	I			C	R
			H	O			I	T
			O	R			A	I
	R		T	H			O	M
					M	N		
O		A						
M		T	A		R	O		N
R		H						



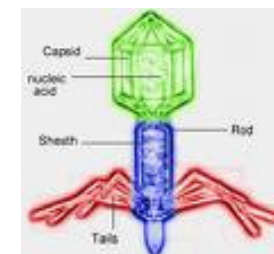
# Virologist

Solving the illness puzzle

## CYPOVIRUS

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word "cypovirus"

			O		R	P		
V		U	P	I			Y	C
C				Y			I	R
		R	C	V			P	
O		S	I	U			R	Y
					Y	I		O
P				S	V			
I		O	R					U
		Y					C	S



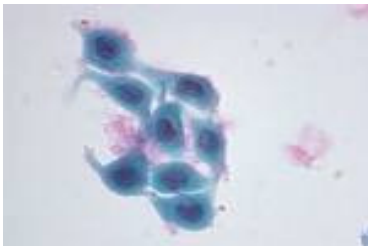
# Histologist

Solving the illness puzzle

## CYTOPLASM

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word "cytoplasm"

A								
	O	C	A		L	M		
	S	M		T				
S	Y						T	
O	M				C	L		P
		P						
		L				A		C
			C		S	Y		T
Y			L		T			



# Forensic Scientist

Solving the illness puzzle

## DOPAMINES

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word "dopamines"

		E		N		A		M
P	O				D			N
N				A	S	E		
		I					N	A
	E	N	I				O	
S			N		M		P	
	I		P				S	
E		P		M	S	I	O	
	D			A				P



# Educator

Solving the illness puzzle

## EDUCATION

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “education”

			I	D		A		O
	U	D	C					T
	E	A	O					
			U			E	O	D
	O			I			T	
U	D	E			T			
					I	T	D	
N					E	O	U	
D		U		C	O			



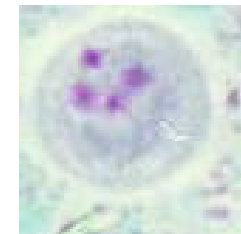
# Parasitologist

Solving the illness puzzle

## ENDOLIMAX

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “endolimax”

M		D		X				
I	A			E	L			
E			N				M	
A	D							
	M	O				L	E	
							O	M
	E				N			I
			X	O			A	L
				I		E		D



# Molecular Biologist

Solving the illness puzzle

## ENZYMATIC

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “enzymatic”

						E		
	T			Z				I
I	E	Y			M		A	
	Y		M	A				
		M				I		
				I	Y		E	
	M		C			Y	N	A
A				Y			M	
		C						



# Mycologist

Solving the illness puzzle

## FILAMENTS

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “filaments”

			I	N	S			
M								N
	A			L			I	
A				M				T
	E	T				L	M	
N				E				S
	M			A			S	
L								I
			T	F	M			



# Hematologist

Solving the illness puzzle

## HEMOLYTIC

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “hemolytic”

Y						L		O
		E	I			M		
H	O			L			T	
			E		T		I	
		H				Y		
	I		O		L			
	M			E			H	Y
		Y			M	I		
E		T						C



# Toxicologist

Solving the illness puzzle

## MORPHINES

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “morphines”

	P			I				
			S			I		N
	O	E	P			R		
			I		R	M	N	
R								E
	S	M	H		E			
		H			P	S	I	
E		O			I			
				H			E	





# Mycobacteriologist

Solving the illness puzzle

## M. ULCERANS

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “mulcerans”

M			C				E	
R					S			A
			N				S	M
C			S			N		
	R						L	
		A			M			S
U	E				N			
S			L					R
	C				U			N



# Immunologist

Solving the illness puzzle

## THYROXINE

Fill in the grid so every row, every column and every 3x3 box contains the letters of the word “thyroxine”

		T		I	E			
	O						X	
		X		N		T		H
R				H				
X		H	Y		N	O		R
				R				I
O		E		Y		I		
	R						H	
			T	O		N		



# GLOSSARY

## Clinical Laboratory Scientist Specialties

**Clinical Chemist:** deals with the composition, structure and properties of substances then studies transformation they undergo in the human disease process.

**Cytotechnologist:** identifies human cells and cellular abnormalities such as cancer from PAP smears.

**Educator:** teaches others the intricacies of the human body including recognizing healthy status versus illness or disease state.

**Forensic Scientist:** applies medical knowledge to legal questions regarding human autopsies, crime scene investigations, etc.

**Geneticist:** studies heredity, gene variation, mutations and analyzes data to predict human illness or disease.

**Hematologist:** studies human blood cells and their components relative ability to function well (i.e. identifying leukemia or anemia).

**Histologist:** microscopically studies the branch of anatomy dealing with human tissue structure and organization.

**Immunohematologist:** performs human blood typing, antibody detection / identification and cross-matches for donor / patient transfusion compatibility.

**Immunologist:** studies the human immune system: cell-mediated and humoral responses that can cause a disease state.

**Molecular Biologist:** works on the ultimate physiochemical organization of living matter such as the molecular basis of inheritance and protein synthesis (i.e. match a specific Salmonella isolate to the “contaminated spinach” outbreak).

**Microbiologist:** studies, identifies and determines acceptable antibiotic treatment for microscopic organisms such as bacteria causing human disease.

**Mycobacteriologist:** studies acid fast bacilli causing human disease (i.e. tuberculosis) and performs susceptibility tests to determine appropriate treatment.

**Mycologist:** studies yeast and fungi causing human disease.

**Parasitologist:** studies the biology branch specializing in macroscopic and microscopic identification of parasites that infest or infect humans (i.e. round worms, malaria, cryptosporidium).

**Toxicologist:** detects and studies poisons – their effect on the human body and monitors treatment.

**Virologist:** isolates and identifies virus causing human disease through culture, antigen detection, fluorescent antibody stains, etc.